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PLANT IMMIGRANTS

Descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the more important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the Inventory of Plants Imported.

No. 119. **MARCH 1916.**

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Pl. 187. The Basket Willow of Madeira, Salix viminalis.
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Applications for material listed in these multigraphed sheets may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it as well as to others selected because of their special fitness to experiment with the particular plants imported. Do not wait for the annual List of New Plant Introductions.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested .

Permission to publish on application only.

Arracacia xanthorrhiza Bancroft. (Apiaceae.) 42137. *Apio* tubers received from Kingston, Jamaica. Presented by Mr. William Harris, Superintendent Hope Gardens. "This uncommon vegetable is a native of the Andes in South America where it is cultivated between 5,000 and 7,000 feet altitude. It is a low parsnip-like plant, producing large edible starchy, carrot-shaped roots, the flavor of which has been compared to a combination of parsnip and potato. The plant will thrive in any good soil, and is adapted only to the higher elevations, say from 4,500 to 6,000 feet. It is commonly cultivated as a vegetable at Bogota in Colombia up to 8,000 feet elevation." (H. F. Macmillan, Handbook of Tropical Gardening, 2nd Edition, p. 234, 1914.) Requires 12 to 16 months without frost for development of its fleshy roots. See Plant Immigrants No. 75 for Plate and description p. 548.

Bambos guadua Humb. & Bonpl. (Poaceae.) 42066. Seeds from Puerto Bertoni, Paraguay. Presented by Dr. Moises S. Bertoni. "In connection with Guaduas I must notice the guadua itself, the most indispensable plant of all New Granada after the plantain, the cane and maize. It might be called the lumber-tree, for it supplies all our fencing except walls of brick, rammed earth, and rarely of stone, and also the wood-work of most houses and whatever is made of boards at the North. It is an enormous grass, like the bamboo of the Eastern tropics, growing, however, to a less height, only 30 or 40 feet. The slender foliage is of inconceivable beauty, comparing with that of other trees as ostrich feathers do with goose-quills. The stem is about 6 inches in diameter with joints about 20 inches apart. The thickness of the wood is nearly an inch. When poles or slats are wanted, the stem is split into four, six or eight parts. For boards for the top of a coarse table, bench, or bedstead, it is opened and flattened out, splitting almost at every inch of width, but not coming entirely apart. For a dish, candle-case, grease-pot, or extemporaneous vessel for carrying drink to a company of hunters or laborers, it is cut off just below the partitions. Such a receptacle is called a tarro. Tarros of double capacity are made for bringing the domestic supply of water for a family, by taking a piece two joints long, with a septum at each end and one in the middle. A hole is made in the upper and middle septa, and if they be used for carrying molasses, a bung can be put in, or an orange used for a stopper. Bottles of a single joint are used for holding castor oil, ect. In short, the uses of the guadua are innumerable. The guadua starts from the ground with the full diameter, or nearly so, but the joints are at first very short. Some

trees send out branches, and they are long, straggling, and terribly thorny. Others grow with a diameter of only two inches, and make good poles for bringing down oranges, every one of which has to be torn from the tree, or it decays without falling. The cavities of the guadua often contain water. It is erroneously believed that the quantity increases and diminishes with the phases of the moon. Stones are said also to be found in these joints. This might be expected, but I never found an authentic instance, and doubt the fact. The only instance believed to occur under my own observation was certainly false, as the stone was an ordinary one. I must state one other thing about the guadua which is unusual in the vegetable kingdom here, but very common at the North. It is apt to take entire possession of the ground on which it grows. Now a square mile covered with the same species, say a pine, an oak, or the beech, an acre covered with the same species of grass or whortleberry or other plant, is no uncommon thing at the North, but in the tropics it is quite different. Plants are not gregarious here, still less exclusive. I have seen the guava grow in natural orchards where most of the trees in a considerable space were Psidium, but even this is rare, and in general you cannot expect, where you have found a plant you want, to find others of the same species near it. If I wish to find a second lime-tree, for instance, it is of no more use to look in the neighborhood where I found the first than in any other. But a guadual is a considerable space, almost always near a stream, where scarce the smallest intruding plant is permitted. The guadua might be cultivated to great profit, but I never knew of but one attempt at it. The flower and seeds are so rare that few botanists have ever seen them." (Holton, New Granada, pp. 109-110.)

Baryxylum dubium (Spreng.) Pierre. (Caesalpiniaceae.) 42325. Seeds from Buenos Aires, Argentina. Presented by Sr. Benito J. Carrasco, Director, Botanic Gardens. A handsome ornamental tree with mimosa-like foliage and striking yellow flowers arranged in nuge panicles. It is closely related to the Royal Poinciana and vies with it in beauty of flower and foliage.

Berberis hookeri viridis Schneider. (Berberidaceae.) 42185. Seeds from Kew, England. Presented by Sir David Prain, Director, Royal Botanic Gardens. Described as a useful evergreen barberry.

Cannabis sativa L. (Moraceae.) 42166. Seeds from Yokohama, Japan. Purchased from the Yokohama Nursery Company. "*Tochigi* (pronounced to-ching-ee) hemp is regarded as the best fiber producing hemp in Japan. It is cultivated most

extensively in the province of Tochigi, about 100 miles north of Yokohama. The slender tall stalks produce a fiber somewhat finer than the average Kentucky hemp. Although this is one of the most promising strains of foreign hemps it is not likely to give satisfactory results in this country until after it has been acclimated by cultivation and selection two or three generations." (L. H. Dewey.)

Capsicum annuum L. (Solanaceae.) 42070-42071. Seeds of two varieties of Chile pepper from State College, New Mexico. Presented by Mr. Fabian Garcia, New Mexico College of Agriculture and Mechanic Arts. These were procured on account of their being very prolific and early strains.

Capsicum annuum L. (Solanaceae.) 42074. Seeds of red pepper from Barcelona, Spain. Presented by Mr. Carl Bailey Hurst, American Consul General. "Spanish sweet pepper known to Spanish agriculture and industry as *Pimiento dulce morron*." (Hurst.)

Cassia siamea Lam. (Caesalpiniaceae.) 42362. Seeds of Madagascar. Presented by Mr. Eugene Jaeglé, Director, Agricultural Station of Ivoloina near Tamatave, through Mr. James G. Carter, American Consul. A valuable, medium-sized shade tree, having pinnately compound leaves and oblong, medium sized leaflets. It is decidedly ornamental on account of its erect, terminal panicles of yellow flowers and elongated flat pods. It is commonly cultivated in the Philippines and has done remarkably well in Cuba. The wood is considered of value for house columns and in the making of furniture. (Adapted from De Lanessan, Plantes Utiles Des Colonies Francaises, and Catalogue of Manila City Nursery.)

Cercidiphyllum japonicum Sieb. & Zucc. (Trochodendraceae.) 42067. A hardy ornamental shrubby tree of pyramidal and when young, almost fastigiate habit, with handsome light green foliage, purplish when unfolding, turning bright yellow or partially scarlet in fall. It prefers rich and moist soil, and grows rapidly when young. A recently introduced Chinese variety, var. *sinense* Rehd. & Wilson, is perhaps still more desirable than the type. It is the largest of all broad-leaved trees known from China, the trunk is sometimes free of branches for nearly 50 feet above the ground, and attains to 25 feet or exceptionally to 55 feet in girth. (Adapted from Bailey, Standard Cyclopedia.) This gorgeous tree introduced from Japan by Col. Clarke who went to Sapporo for the Japanese Department of Agriculture deserves to be much more widely planted than it is. Its pink leaves are beautiful in Spring and in Autumn turn a wonderful yellow color. The trunk should be protected from the sun as much as possible. Likes moist ground. Perfectly hardy in the Arnold Arboretum at Boston.

Chilopsis linearis (Cav.) Sweet. (Bignoniaceae.) 42202. Seeds from the Santa Rita Mountains, Arizona. Collected by Dr. David Griffiths. "This is a willow-like small tree inhabiting desert washes from Texas to California. It is very showy when in blossom, the flowers being purplish tinged and resembling those of a miniature catalpa. In nature its habit is quite open and lax, but it stands pruning and can easily be shaped as desired. The seed can probably be planted in the open in a situation where there is good drainage and where moisture conditions can be controlled when the hot, dry season arrives." (Griffiths.)

Cornus bretschneideri Henry. (Cornaceae.) 42188. Seeds from Kew, England. Presented by Sir David Prain, Director, Royal Botanic Gardens. A Chinese Cornus, with the young wood blood red, which succeeds well as far north as Rochester, New York. The flowers in dense cymes and fruit black.

Cymbopetalum penduliflorum (Dun.) Baillon. (Annonaceae.) 42047. Seeds from Guatemala. Presented by Mr. Stuart K. Lupton, American Consul, Guatemala City. "Sacred ear flower, or *orejuela*, as it is locally known. These petals and seeds were obtained through the kindness of Mr. R. S. Anderson, an American resident in Coban, Guatemala." (Lupton.) See article by Mr. W. E. Safford on this plant, Smithsonian Report 1910, p. 427-431.

Dasylirion wheeleri S. Wats. (Liliaceae.) 42203. Sotol seed collected by Dr. David Griffiths. "The sotol is on the whole a rather stiff, formal plant of the yucca family. It has a short, thick trunk, long, narrow, flat, spiny-edged, gracefully-drooping leaves, very different in this respect from the stiff, rigid century plants which are not distant relatives. It does not sucker like the century plants, neither does the plant die when it has thrown up a flower stalk, thus leaving an ugly break in the planting. Its flower stalks are immense. They often reach a height of 8 or 10 feet, the myriads of small flowers occupying a solid, spindle-shaped space 4 feet in length. The plant itself, with its glaucous graceful leaves, is handsome, but it is strikingly attractive from early blossoming until late winter after the mass of seed has fallen. They are most attractive as specimen plants. In Mexico the leaves are stripped of their curved teeth by being pulled through a slit cut in a piece of tin and then woven into a durable floor covering, the ones which I have seen lasting in good condition for a couple of years under ordinary wear. The usual practice is for the weaver to enter the house with an armful of the leaves suitably stained, begin in one corner of the room and weave a mat to fit the floor, composing the design as he proceeds. The price is usually

about forty cents (Mexican money) per meter. From the stems of the plant, particularly in the state of Chihuahua, is manufactured one of the most violent intoxicating distillates. In times of excessive drought the plants are cut down and the stems chopped up as feed for live stock. I believe that the seeds of this planted where drainage is good and where moisture conditions can be controlled can be brought through in the open." (Griffiths.)

Hydrangea xanthoneura wilsonii Rehder. (Hydrangeaceae.) 42190. Seeds from Kew, England. Presented by Sir David Prain, Director, Royal Botanic Gardens. A tree 15 to 16 feet high of elegant and distinct habit, with clusters of white flowers 10 to 12 inches across. Discovered by E. H. Wilson in Western Szechuan, China.

Indigofera spp. (Fabaceae.) 42173-42176. Seeds of four species of indigo from Buitenzorg, Java. Presented by Director, Department of Agriculture, and introduced for experiments by this Department in dye production.

Inodes texana O.F.Cook. (Phoenicaceae.) 42280. Seeds collected by Dr. David Griffiths. "This native palm of the Rio Grande delta, while planted locally to some extent, is a species which has been much neglected. It will fill the same role in plantings as the fan leaf palm (*Washingtonia sp.*) and appears to be a little more hardy to frost conditions. It will form a pleasing variation with that species so extensively grown in the warmer regions of this country and serve to extend somewhat the regions of possible palm culture. It is a species with a very local distribution in nature being known only from this one delta region. It is reproducing well in the natural state at present. The seed germinate readily soon after they fall from the trees in late autumn. It is however, extensively gathered and made into ornaments by the native population. This no doubt interferes decidedly with its reproduction." (Griffiths.)

Ligustrum spp. (Oleaceae.) 42211-42222. Cuttings of 12 hybrid privets from New Haven, Connecticut. Presented by the Elm City Nursery Company. "The seed parent was *Ligustrum ovalifolium*, pollen parent *Ligustrum ibota* (northern type). Seed obtained from *Ligustrum ovalifolium* in the fall of 1910 from single plant in a group of several of *Ibota*. The seed plant attracted our attention as it hung heavy with fruit which is not common in this vicinity. The inference was that cross-fertilization had taken place with *Ibota*. The seedlings some hundreds of which were planted into the field the following season showed every indication that the crossing did take place. No two are very similar, varying greatly from upright to almost prostrate

THE BASKET WILLOW OF MADEIRA AS A SNOW FENCE ON LONG ISLAND.

A row of willows grown from cuttings of S. P. I. No. 19856, *Salix viminalis*, at the Experimental Farm of the Long Island Railroad at Medford, N. Y. Rows like this were planted along the line of the Long Island Railroad by Mr. H. B. Fullerton, and because of the fact that this species of willow grows just the right height and forms a dense mat of branches, it has proven to be an excellent snow fence. According to Mr. Fullerton, the railroad is now planting considerable stretches of its road with this willow, depending upon it to prevent the snow from drifting into the cuts. It takes the place of the board snow fences. This willow, which was secured by Mr. Fairchild in Funchal, is grown extensively in the island of Madeira, and many kinds of furniture are made from it and shipped all over the world. It forms one of the important industries of the island. Photograph by Mr. H. B. Fullerton, Medford, N. Y.

TUNG-OIL TREE (*Aleurites fordii* Hemsley), S. P. I. No. 21013.

A very prolific but small-fruited tung-oil tree growing at the Agricultural Experiment Station, Experiment, Ga. This tree when planted out in 1908 was 1 year old from seed, and when 7 years old, in 1914, it produced over 2½ bushels of fruit, containing 45½ pounds of clean seeds. These seeds were given S. P. I. No. 39532. Photograph (P15755FS) by Mr. R. A. Young, September 28, 1914, showing Mr. H. P. Stucky standing beside the tree.

in habit, some very luxuriant and others quite dwarf, some now producing terminal clusters of fruit while others fruit on the lateral branches only. Many have glossy leaves which are quite as persistent as *ovalifolium*, the foliage of others matures early. From among the original planting we have now reduced the number which have unquestioned merit to 50 and these are growing at Edgewood. They vary at present in height from two feet to twelve. We anticipate that some of them will prove to be valuable hedge plants partaking enough of the characteristics of *ovalifolium* to give these plants desirable hedge qualities and at the same time prove more hardy owing to the infusion of *Ibota* blood. They have not yet been subjected to temperature exposures which have killed *ovalifolium* entirely to the ground, conditions which do occur occasionally in this vicinity so their relative hardiness has not yet been absolutely determined as yet." (Elm City Nursery Co.)

Nephelium lappaceum L. (Sapindaceae.) 42086. One seed from Buitenzorg, Java. Presented by Dr. J. C. Koningsberger, Director Botanic Garden. "*Ramboetan atjeh matjan*. A tree up to 25 meters high. This fruiting tree is an ornament of the Javanese village groves, because the pretty, often more or less dense leaf-crown is decorated on the outside with the numerous scarlet, long-stemmed fruits the size of a hen's egg. Arillus white, very juicy, more or less sour." (Koorders and Valeton, Systematisches verzeichnis.) See Plant Immigrant No. 31, for photographs and previous description.

Paulownia mikado Ito. (Scrophulariaceae.) 42036. Seeds from Taihoku, Formosa, Japan. Presented by Mr. M. Takata, Department of Productive Industries. A magnificent tree 30 to 50 feet high, much resembling the well known *P. imperialis*, but having slightly shorter panicles of larger lilac or purple-tinted flowers dotted with purple on the inside of the corolla. A native of Central Formosa. (Adapted from T. Ito, Icones Plantarum Japonicarum, Vol. 1, p. 5, pl. 9, 1912.)

Phaseolus lunatus L. (Fabaceae.) 42270. Seeds of Lima bean from Tamatave, Madagascar. Presented by Mr. James G. Carter, American Consul. "Commonly known in Madagascar as 'pois du cap' (Cape beans). The annual quantity of Cape beans exported from the west coast of Madagascar amounts to about 7,000 tons. These go principally to England, and, from there, are exported in considerable quantities to the New York market." (Carter.)

Phaseolus vulgaris L. (Fabaceae.) 42049. Seeds from Puerto Bertoni, Paraguay. Presented by Dr. Moises S. Bertoni. "Forma *tawana*. The *taguana*, or giant bean of the Guar-

anis, which is only a form of the common bean, perhaps the typical form from which the beans arose. But if it is botanically only a form, from the agricultural point of view it is more than a variety. This bean has been cultivated by the Guaranis certainly since a remote antiquity. The most notable peculiarity of this variety is its enormous growth. It has a long shoot which grows to 15 or 20 meters so that in a wood it climbs to the tops of high trees. Cultivated without branching it develops less, but yet produces abundantly, the production keeping step with the development, so that a well developed plant will produce up to 10 kilos of clean seed." (Bertoni, Agronomía, vol. 5, p. 326-327, 1913.)

Pittosporum fairchildi Cheeseman. (Pittosporaceae.) 42177. Seeds from Auckland, New Zealand. Presented by Mr. H. R. Wright, Avondale Nursery. "This variety bears a striking resemblance to *P. crassifolium* (S.P.I. No. 41290), but is the more dense of the two, consequently better. It ripens its seed several months later; makes a splendid hedge and good also as a shrub tree, height about 20 feet. This variety was discovered by the late Captain Fairchild, on an island off the New Zealand coast. The seeds take a long time to germinate, and forcing them is of no use. Plants are tender when young but hardy when established." (Wright.)

Prunus bokhariensis Royle. (Amygdalaceae.) 42057. Seeds from Simla, Punjab, India. Presented by Mr. E. Long, Superintendent, Vice-Regal Gardens. The Alucha, Aru Bokhara or Annandale plum. Somewhat resembles *Prunus triflora*, but is believed to be a distinct species, and appears to be of much value in breeding work.

Puya chilensis Molina. (Bromeliaceae.) 42082. Seeds from Lima, Peru. Presented by Dr. A. Weberbauer. "One of the most interesting plants of the Peruvian Cordilleras. I collected the seed at Capaya, Department of Apurimac, Province of Aymaraes, at an elevation of 4,000 to 4,100 meters above sea level, in a region where frosts and snowfall are abundant. The plants need not therefore perhaps be cultivated in a greenhouse, but require only protection against sharp frosts and must naturally receive much light. In the vicinity of Capaya the plant is called *titanca*. Heretofore I have known this plant only from the Cordilleras between 9 and 10° S. and have described and figured it in my book, Die Pflanzenwelt der Peruanischen Anden." (Weberbauer.) "This is one of the most striking of our Bromeliaceous plants, cultivated in a cool stove of the Royal Gardens of Kew. The stem, or caudex, has now attained a height of four feet, independent of the leaves, which are from three to four feet in length, spreading in all direc-

tions; the lower ones being reflexed. These leaves would render the plant admirably suited to the formation of fences, in the nature of the spinous margins; for the upper half of the leaf has all the spines directed forward towards the apex, presenting a great obstacle to intrusion of man or beast in that direction, whilst those lower down the leaf (longer and stronger too) have their curvature downwards, so that if man or animal is so bold as to make his way partially through, the decurved spines would prevent his retracing his steps with impunity. The compound spike of flowers upon the column-like perfectly straight peduncle is remarkable for its size; the large full yellow (but inclining to green) flowers and the copious bracteas turning brown or black in age. This plant is called *Cardon* and *Puya* in Chili, where the soft substance of the stem is used for corks and bungs: the flowers yield a remedy for hernia, and the Indians use the spines of the leaves for fish-hooks." (Curtis's Botanical Magazine, vol. 9, pl. 4715.)

Ribes spp. (Grossulariaceae.) 42223-42267. Cuttings of 45 varieties of black, red, and white currants from Lethbridge, Alberta, Canada. Presented by Mr. W. H. Fairfield, Superintendent, Experimental Station for Southern Alberta. Introduced for experimental work of the Office of Horticultural and Pomological Investiations because of their success in the trying climate of Alberta and for distribution through the North West.

Soja max (L.) Piper. (Fabaceae.) 42059. Seeds of soybean from Keijo, Chosen, Japan. Presented by Miss Katherine Wambold. "*Kong*. Cooked, pressed, hung all winter to rafters, then soaked in a brown liquid, called *chang*, used as a salty sauce on food. It is parched and eaten just so. A few partly cooked grains are often scattered in the rice as we use raisins in a rice pudding." (Wambold.)

Spiraea veitchi Hemsley. (Rosaceae.) 42195. Seeds from Kew, England. Presented by Sir David Prain, Director, Royal Botanic Gardens. Considered by Mr. Wilson the best of Chinese Spiraeas. Produces arching shoots sometimes 6 feet long wreathed from end to end with clusters of pure white blossoms. Hardy in the Arnold Arboretum.

Viburnum rhytidophyllum Hemsley. (Caprifoliaceae.) 42199. Seeds from Kew, England. Presented by Sir David Prain, Director, Royal Botanic Gardens. A remarkable shrub which is one of the most distinct and striking of all the newer Chinese shrubs. This shrub has a curious habit of forming its inflorescences and partially developing them in autumn, but they remain exposed all through the winter and until the blossoms expand the following May or June. (Adapted from W. J. Bean, Trees and Shrubs Hardy in the British Isles, vol. 2, p. 655.)

NOTES ON BEHAVIOR OF PREVIOUS INTRODUCTIONS.

Among the numerous varieties of mangos introduced by this Office from the Orient and other regions, several are proving of great promise in south Florida, and at least one has been planted on a commercial scale. This is the Bennett, introduced from Bombay, India, under S.P.I. numbers 8419 and 8727. Under the first number, cions obtained from the Cooper estate were sent in by Messrs. Lathrop and Fairchild; under the second number cions were sent in by Douglas Bennett, for many years superintendent of the Bombay market, and for whom the variety has been named. The behavior of these two numbers in Florida has led horticulturists to believe that they are not precisely the same variety, since there are slight differences in the fruit. They are sufficiently alike, however, so that they cannot be distinguished by the average person. This mango, which was originally called Douglas Bennett's Golden Alphonse, but is now termed Bennett for convenience, is a selected form of the famous Alphonse mango of Bombay, noted for its unusual keeping qualities and excellent commercial characteristics. In Florida it has proved to be a more regular bearer than Mulgoba, yet does not usually produce heavy crops. The fruits are of excellent quality, the flesh being deep orange in color, free from fiber, and of a rich, luscious flavor. The only defect which has been pointed out by Florida growers is the rather dull color of the fruit, which makes it less attractive in the market than Mulgoba. Last season many crates of fruit were sent from one grove near Miami to the markets of the north, excellent prices being realized.

Paheri, while not yet planted commercially, seems likely to take an important place among the commercial mangos of the future. This variety, which was introduced from Bombay, India, under S.P.I. No. 8730, and was given to Messrs. Lathrop and Fairchild by Mr. T. N. Tata, the Parsee millionaire of Bombay is somewhat similar to Bennett in general characteristics, but has a reddish cheek, and is perhaps even richer in flavor. It gives promise of being a good bearer, showing a tendency to produce heavier crops than Bennett or Mulgoba. The fruit is considered in India to possess rather poor keeping qualities, and hence is not so valuable commercially as Bennett. It seems likely to be a sufficiently good keeper for market purposes in this country, however, since trial shipments which have been sent from Florida to Washington and held in cold storage have ripened and developed their characteristic aroma and flavor.

Amini, introduced from Bangalore, India, under S.P.I. No. 7104. through Dr. A. Lehmann, has proved to be one of the most attractive mangos grown in Florida. Its small size may be somewhat against it as a market fruit, but its unusually bright color,-deep yellow with a scarlet cheek,-makes it strikingly attractive, while its strong, spicy aroma is not equalled by that of any other variety grown in Florida. In flavor it is very spicy and aromatic, and the flesh is free from fiber. Its bearing habits have not been thoroughly determined as yet, but it seems likely to prove moderately productive, and worthy of general planting.

The Cambodiana race of seedling mangos which has been disseminated in south, Florida arose from two shipments of seeds, S.P.I. No. 8701, secured by Lathrop and Fairchild in Saigon in 1902, and 11645, secured through the late Director Haffner of the Botanic Gardens there. This is a race which comes practically true from seed, and the fruit is of very good quality. A seedling in the Plant Introduction Garden at Miami, S.P.I. No. 11645, has proved to be unusually prolific and regular in fruiting, and has recently been propagated by budding. This race, which is in many ways quite distinct from all of the Indian mangos, has shown itself more productive than any of the Indian mangos yet fruited in Florida, and seems likely to take a prominent place in the future.

D'Or, S.P.I. No. 28085, introduced by Mr. F. Evans, of the Botanic Department of Trinidad, is a West Indian variety which has proved of value. While the fruit is not so richly flavored as the best Indian varieties, it is of good quality, and the tree has the valuable habit of commencing to bear when very small, and producing heavily. Plants growing in 8-inch pots have fruited at the Miami Plant Introduction Garden. This variety is now being propagated commercially by nurserymen.

Gola Alphonse, S.P.I. No. 29506, purchased from Mr. Wm. Burns, of Poona, India, came into bearing at the Miami Plant Introduction Garden last season, and proved to be a very late variety. The fruit had remarkable keeping qualities, but is not very attractive in color. Inasmuch as late mangos are at present very scarce, this variety may become of considerable value. In quality it seems about equal to Bennett.

Sandersha, S.P.I. No. 7108, secured through Dr. A. Lehmann, of Bangalore, India, has become one of the best known Indian varieties in Florida, and has also been propagated rather extensively in Cuba and the Isle of Pines. It has no superior among the Indian varieties in productiveness and regularity of bearing, but is not looked upon

as a desirable dessert fruit, its flavor being subacid, and lacking in richness. The fruits are very large, often weighing two pounds, and ripen late in the season. For culinary use they are excellent, yielding delicious sauces, if stewed before fully ripe. Shipments to northern markets in past years have brought excellent returns, the fruits being marketable in October, when there are no other mangos available.

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Mr. E. H. Wilson, Arnold Arboretum, Jamaica Plain, Mass.